

Micro Reaction in Europe and Asia: Status of R&D and Industry, Applications and Markets

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Micro-reaction technology is attracting increasing attention worldwide. In Asia, where little was happening three years ago, Japan is investing US\$60 million over five years in an ambitious micro-reaction plan with strong industrial involvement. Micro-reaction is a main focus of the new German federal funding program that started this year. In the US, micro-reaction programs for energy and military applications are ongoing. However, it seems that the market breakthrough announced two years ago in the PAMIR study for production applications seems to be delayed. A German microreaction startup went bankrupt this year. Will micro-reaction remain at laboratory level or in just a few small niches? Will micro-reaction make it into production applications at a larger scale? Is there an interesting market for micro-reaction components?

WTC is evaluating the market potential of micro-reaction on behalf of the German MEMS funding program. This presentation will give an overview of the status of R&D and industry, applications and markets in micro reaction for Europe and Asia. We will highlight technical and economical challenges that need to be solved to open production applications such as chemistry and process engineering. The main targeted applications in Europe will be presented. These will be shown through examples of chemistry manufacturers and process engineering companies that are following with great attention developments of new compounds and technologies to integrate them into chemical manufacturing plants.

Key aspects of R&D activities differ in France, the UK, and Germany. We will present information on the micro-reaction technologies market in Asia, the loan program for micro-reaction of NEDO, the main players, targeted applications in Asia, and the status of R&D in comparison with Europe. Finally, we will present a preliminary estimation of the world market for micro-reaction techniques.